STATE OF UTAH
NATURAL RESOURCES & ENERGY
Oil, Gas & Mining

Scott M. Matheson, Governor
Temple A. Reynolds, Executive Director
Cleon B. Feight, Division Director

4241 State Office Building • Salt Lake City, UT 84114 • 801-533-5771

December 13, 1982

Mr. Delbert D. Thomas
Shale Development Corporation
P. O. Box 44
Redlands, California 92373

RE: Shale Development Corporation
Sand Wash Mine
ACT/047/005
Uintah County, Utah

Dear Mr. Thomas:

The Division of Oil, Gas and Mining has made a preliminary review of the Sand Wash proposal to determine compliance with Rule M-3 of the Utah Mined Land Reclamation Act of 1975, Title 40-8, Utah Code Annotated 1953. This review was based on information submitted in 1980 on MR Forms 1, 2 and 8, the attached 1980 proposal and the revised plan and maps submitted and received November 4, 1982.

In this review, certain necessary information was found to be lacking. The additional information that is needed to complete our review is detailed on the following pages. The information should be submitted as a part of, or in conjunction with, the revised MR-1 Form (which replaces MR Forms 1, 2 and 8) and which is required due to the revisions made to the plan since it was originally submitted in 1980. A copy of the MR-1 Form is enclosed. When the additional information and forms have been received, the total plan can be assessed for compliance with the regulations.

If you have any questions, or would like to set up any additional meetings with members of the review team, please contact me or Cy Young of my staff.

Sincerely,

JAMES W. SMITH, JR.
COORDINATOR OF MINED
LAND DEVELOPMENT

JWS/CY:btb

Enclosures

PRELIMINARY REVIEW

Shale Development Corporation
Sand Wash Mine
ACT/047/005, Uintah County, Utah

Rule M-3(1)(b)

Within the interior limits of the land affected, show the boundaries of surface properties and the names of surface and mineral owners.

Rule M-3(1)(e)

It is unclear how the operator intends to minimize the loss of sediment from the disturbed areas. The drainage control details do not appear to provide for specific sediment control structures (i.e., settling basins, check dams, straw filters or other measures). Berms, culverts and rock energy dissipators may not be adequate to control sediment losses from the minesite area.

The operator should provide for a contingency plan which could include some of the measures mentioned above, should the proposed plan provide ineffectual.

The operator refers reviewer to engineering calculations on pages EN1-7, yet no specific calculations were located upon review of these pages.

It is the Division's opinion that the design storage selected for sizing of drainage control structures will be more than adequate. However, it is requested that the specific design calculations and assumptions to be utilized in the final construction design be submitted to the Division for review at least 60 days prior to the planned implementation of the same.

Rule M-3(1)(f)

On maps of the scale provided, locate known test borings or core holes. Show the depth of any water bearing strata encountered, thickness of shale deposits applicable to projected mining and the depth and thickness of plant support material. A geologic cross-section through the mine plan area would be helpful in this part of the review.

Rule M-3(1)(g)

Show the location for storage of plant support material and projected drainage pattern related to the storage area.

Rule M-3(1)(h)

Discuss in more detail access to water for culinary, waste disposal and processing. Include hauling, storage, handling and discharge to the environment, if applicable.

Rule M-3(2)(a), (b)

Discuss known prior and current uses of the land area to be disturbed by exploration and mining and also discuss possible uses for the land following termination of mining and postmining reclamation.

The applicant shall commit to the following reclamation standards which have not been addressed in the mine plan but are required by Rule M-10 - Reclamation Standards.

Rule M-3(2)(c)
M-10(6)

Please provide additional information as to the handling of overburden, waste rock or other processing waste. This should include handling procedures, stockpile or dump locations and methods used to identify any toxicity problems with particular reference to any potential chemical effect on revegetation and/or runoff water quality. If it is highly saline or alkaline, it could have adverse effects. Possibly a minimal sampling scheme (pH and EC) could provide an indication as to the necessity of performing additional tests.

Rule M-3(2)(d)

Attach pre- and postmining contour cross-sections.

Rule M-3(2)(f)

A detailed timetable for the accomplishment of each major step in the reclamation plan, after the operation is completed, must be submitted.

Rule M-3(3)

The submittal contained a description of the limited amount of mining. The mine plan should contain more comprehensive detail for the permit about the mining operation.

Rule M-5

The applicant must submit detailed accurate cost estimates for all reclamation procedures.

Rule M-10(2)(b)

Discuss removal of trash, scrap metal and wood, extraneous debris and other materials incident to mining. All such materials should be taken to a sanitary landfill. Will this occur during the operation or will a disposal site be set up for the duration of the operation to be followed by disposal in total along with the cessation of mining?

Rule M-10(2)(d)

Discuss the posting of appropriate warning signs in and around the proposed permit area.

Rule M-10(5)

Will the operator be generating any highwalls during the mining operation? If so, will these highwalls be of a temporary or long-term nature? What is the approximate size and/or height of these highwalls? How will these highwalls be stabilized and regraded or contoured to fit the postmining land-use? Please describe.

Rule M-10(11)

Will any sediment control measures be utilized? What is the annual precipitation for the area, will any natural drainage ways be impacted by the mining operation? Will any discharges occur from this mining operation?

Rule M-10(12)

The representative ground cover is given as 15 percent. How was this determined? It is important that this number be accurate since this will be the standard for revegetation success and consequently for bond release. Cover transects done by the BLM in similar habitat types are acceptable, or other "professionally accepted inventory methods" may be used.

The applicant has indicated that test plots will be used to determine the revegetation plan for retorted shale areas. All treatments to be utilized, monitoring practices and a discussion of how the results will be used to determine final revegetation practices should be submitted to DOGM prior to test plot implementation. A complete revegetation plan, including a seed mix appropriate to the postmining land-use; rate of seeding in Pure Live Seed (PLS) per acre or stocking rate (stems/acre) for shrub plantings; seeding and planting techniques; mulching, irrigation and fertilzation methods, amounts and frequencies or duration of application, must be submitted to DOGM at least 60 days prior to any final reclamation taking place.

Applicant has indicated that approximately three acres of fill banks will be reseeded. A complete revegetation plan for these areas must also be submitted at least 60 days prior to any fill bank stabilization, and probably can be submitted at this time.

Monitoring of revegetated areas during the bond release period should be discussed. This includes monitoring methods, timing and duration of monitoring and method of determining whether or not the success standard has been achieved. Funds for monitoring of revegetation success should be included in surety calculations.

Rule M-10(14)
M-3(1)(f)

The permit application is lacking in that insufficient information is provided to allow for the development of criteria for topsoil and subsoil salvage operations as well as volumes required to effect reclamation.

A more specific soils map would be a great asset in planning a topsoil management program. A map should be provided which relates soil series and/or complex and available soil depth to soils to be salvaged. The applicant should relate the location of surface facilities as well as all areas to be disturbed to this map. Please indicate the location of all sample points taken for each soil series on this map.

Laboratory tests will aid in detecting any soil physical or chemical conditions which may be detrimental to plant growth and to determine any nutrients shown to be deficient. These tests should include, but not be limited to, soil texture, pH, electrical conductivity, available nitrogen, cation exchange capacity (CEC), available phosphorus, available potassium, soluble calcium, magnesium and sodium. Sampling should be done according to depth to identify any toxic or inhibitory layers which may be present.

This information will aid in the development of a soils management program which will identify the depth to which soils should be removed, the volume of available topsoil and should give an indication as to the volume of soil required to effect successful reclamation. This information should be used to provide a materials balance sheet demonstrating adequate plant growth medium.

Soil Protection and Storage

What measures will be employed to achieve adequate topsoil stockpile protection? Will drainage be diverted away from piles? Will berms be used to retain soil? Will terraces be employed on soil stockpiles? Will seeding and/or mulching be utilized or will other surface stabilizing agents or measures be used?

1. What is the anticipated final depth of each of the stockpiles?

2. What will be the probable dimensions of each stockpile at its greatest extent?

3. What will be the slope of the stockpiles? Will terraces be employed?

The applicant may best address these concerns by providing topsoil stockpile configurations and cross-sections.

Soil Redistribution

Please indicate all areas which will receive topsoil providing specific information as to the depth of replacement.

Will areas to receive plant growth material be scarified to prevent loss of redistributed materials?

The applicant should specify the season of year during which soil redistribution will occur.

Form MR-1, page 5, #16. How will water for operations be obtained? Have all necessary water rights been appropriated. Please describe uses of water on-site and any processing water which will be produced, consumed or discharged.

Form MR-1, page 5, #15D. If any water discharges are proposed from the minesite area, please include a water quality analysis lab report or a provision for submission of the same.

Form MR-1, page 9, #24. The operator should include a reclamation plan for the removal of all berms, impoundments, culverts, fills, pads, roads, etc., which will not be required for continued operations should the pilot exploration proposal provide unsuccessful.

If certain facilities will remain by landowner request upon abandonment, then a formal notice should be included within the MRP detailing the specifics.